One shortnosed fruit bat moved from the group and came close to the palm tree where the owl was resting. Immediately, the owl swooped and captured the bat in flight and returned to the tree where it had been perching. It rested there with the bat for about 10 seconds, got a firm grasp on the bat with its feet, and flew away. The bat did not produce any screams audible to human ears.

In South Africa, Fenton *et al.* (1994) reported 59 attacks by diurnal raptors on bats and the predators included hobby falcon *Falco subbuteo*, African goshawk *Accipiter tachiro* and Wahlberg's eagle *Aquila wahlbergi*. Similarly in south-eastern Australia, Speakman *et al.* (1994) released bats during daytime to test the predation rates, and observed 11 attacks by diurnal predatory birds. Shortnosed fruit bats *Cynopterus sphinx* usually produced shrill screams when we handled them in mist nets, but the bat attacked by the barn owl did not scream. However, Fenton *et al.* (1994) report that bats taken by raptors uttered screams clearly audible to human ears. Bat bones were seen in owl pellets, and African barn owls *Tyto alba* were reported to attack and eat individuals of *Rousettus aegyptiacus* (Hill and Smith 1984). Although Speakman (1991) reported that bats made up only a small part of the diet of owls in Britain, Julian and Althringham (1994) predicted that individual owls could take large numbers of bats, and may influence the population size in bat colonies. Only two cases of barn owl predation have been observed during our study, and more data are needed to evaluate whether or not owl predation influences the population size of bats around Tirunagiri village in Nagai district, Tamil Nadu.

February 15, 1999 G. AGORAMOORTHY
Bat Conservation Project,
S.M. Govindasamy Nayakkar
Memorial Foundation,
4 Thittai Road, Thenpaty 609 111,
Nagai District, Tamil Nadu, India.
MINNA J. HSU
Department of Biological Sciences,
National Sun Yat-sen University,
Kaohsiung 80424,
Taiwan, Republic of China.

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11. A NOTE ON SARUS CRANE *GRUS ANTIGONE* MORTALITY DUE TO COLLISION WITH HIGH-TENSION POWER LINES

The sarus crane (*Grus antigone*) is the only resident crane species breeding in India, south of the Himalayas. Few long term studies have been carried out and information on its mortality

is limited and scattered (Gole 1989, Parasharya *et al.* 1991). Largely, human pressure and associated changes in land use patterns, and intensification in agriculture are major threats to the cranes (Meine and Archibald 1996). Egg stealing, hunting, trade in live birds and death due to ingestion of pesticides by adult birds are the other known threats (Gole 1989, Muralidharan 1992, Sundar *et al. in prep.*). Mortality due to electrocution has been documented rarely (Parasharya *et al.* 1991) and its impact on sarus crane population dynamics is not quite clear.

During a survey in the states of Punjab, Haryana, Rajasthan, Gujarat, Uttar Pradesh, Maharashtra, Bihar and Madhya Pradesh, from June to October 1998, to determine distribution and status of the sarus crane in India, we recorded three instances of crane mortality due to collision with high-tension electric cables. In Aligarh district, Uttar Pradesh, one adult female was found freshly killed in this manner near Shekha Jheel on June 24, 1998. The bird was one of a pair that the locals had seen for the past couple of years breeding in a nearby paddy field. The crane apparently came in contact with the wires over the paddy field while landing to roost for the night. The male stayed near the female body for a day (as in Ali and Ripley 1980) and then flew away. Another case was recorded in Mainpuri, Uttar Pradesh, on June 28, 1998. While carrying out a road transect near the Saman Bird Sanctuary, we saw two sarus cranes killed in the same way. These two birds had been partially eaten by vultures and the sexes could not be determined from the carcasses. In Aligarh, the survey revealed five cranes in the vicinity of the Shekha Jheel (over 15 kms) and 79 birds were counted in the Mainpuri road transect (covering 50 kms).

Bird collisions with power lines are a common phenomenon the world over, waterfowl and passerine birds having the highest known collision rates (Cornwell and Hochbrum 1971, Morkill *et al.* 1990). Some authors have remarked that these mortalities are not biologically significant to bird populations (Stout and Cornwell 1976), but are detrimental to endangered bird species or for populations of birds which have high local concentrations (Morkill *et al.* 1990). Collision is a major cause of mortality in several crane species the world over. For example, the major cause for death of fledged adult whooping crane (*Grus americana*) is found to be collision with high-tension power lines (Lewis 1986). Morkill *et al.* (1990) have found similar results in sandhill crane (*Grus canadensis*), having recorded 126 incidents of crane mortality between 1988-89. Records of red-crowned crane (*Grus japonensis*) populations from the 1950s onwards showed a stage of reduced growth rate, when 71% of 79 deaths in 1970-74 were due to collision with electric cables (Masatomi 1987).

While the trends in sarus crane mortality and repercussions on the local populations are unclear from our data, it is one step towards long-term studies. The number of deaths seems quite low in the Mainpuri area, while it is a significant proportion of the total number of resident birds in the Aligarh district. Long-term collection of data in these localities over larger areas is necessary and may reveal the impact of such mortality on the populations of the sarus cranes. With the national power grid network and several state electrical corporations planning expansion of high-tension power lines, their impact on large-bodied migratory and resident birds such as cranes can looked into, to avoid the major flyways and migratory paths.

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April 13, 1999 K.S. GOPI SUNDAR
B.C. CHOUDHURY
Wildlife Institute of India, P.B. # 18, Chandrabani, Dehradun 248 001, Uttaranchal, India.

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12. OCCURRENCE OF GREAT INDIAN BUSTARD *ARDEOTIS NIGRICEPS* AT HOSUR, NASHIK DISTRICT, MAHARASHTRA

Three great Indian bustards *Ardeotis nigriceps* were sighted by one of us (BR) at the Hindustan Aeronautics Ltd (HAL) complex at Hosur, 20 km from Nashik towards Dhulia, on National Highway 3 on September 2, 1998. On subsequent visits, a single bird was sighted on September 24, 1998, and three birds on September 25, 1998. The birds are seen regularly on the runway by the Air Traffic Control (ATC) staff (Mr. Kale *pers. comm.*). Two chicks were observed in 1998, while displaying males are regularly sighted in the monsoon. According to the ATC staff, a maximum of nine birds have been recorded in the area, since at least 1974 (Mr. Kale *pers. comm.*).

The HAL complex is a huge area, encircled by a 13.5 km perimeter wall. Most of the 14.3 sq. km area is open grassland, except for the small area occupied by the office and factory buildings. The HAL complex is largely used to repair military aircraft, which are test flown from a runway that almost bisects the grassland.

The area is gently undulating, dominated by the forbs of *Borreria* sp. and *Boerhavia* sp., and grasses of *Chrysopogon* sp. The vegetation height is about 1.5 m. There are a few scattered *Acacia nilotica* trees and *Ziziphus* bushes. There is no human activity except for the occasional flying military aircraft, and movement of security personnel between the outposts. There is no cattle grazing, while grass is burnt only along the runway by the authorities during summer. Good grass growth is observed within the inner perimeter wall, which is a high security area.